

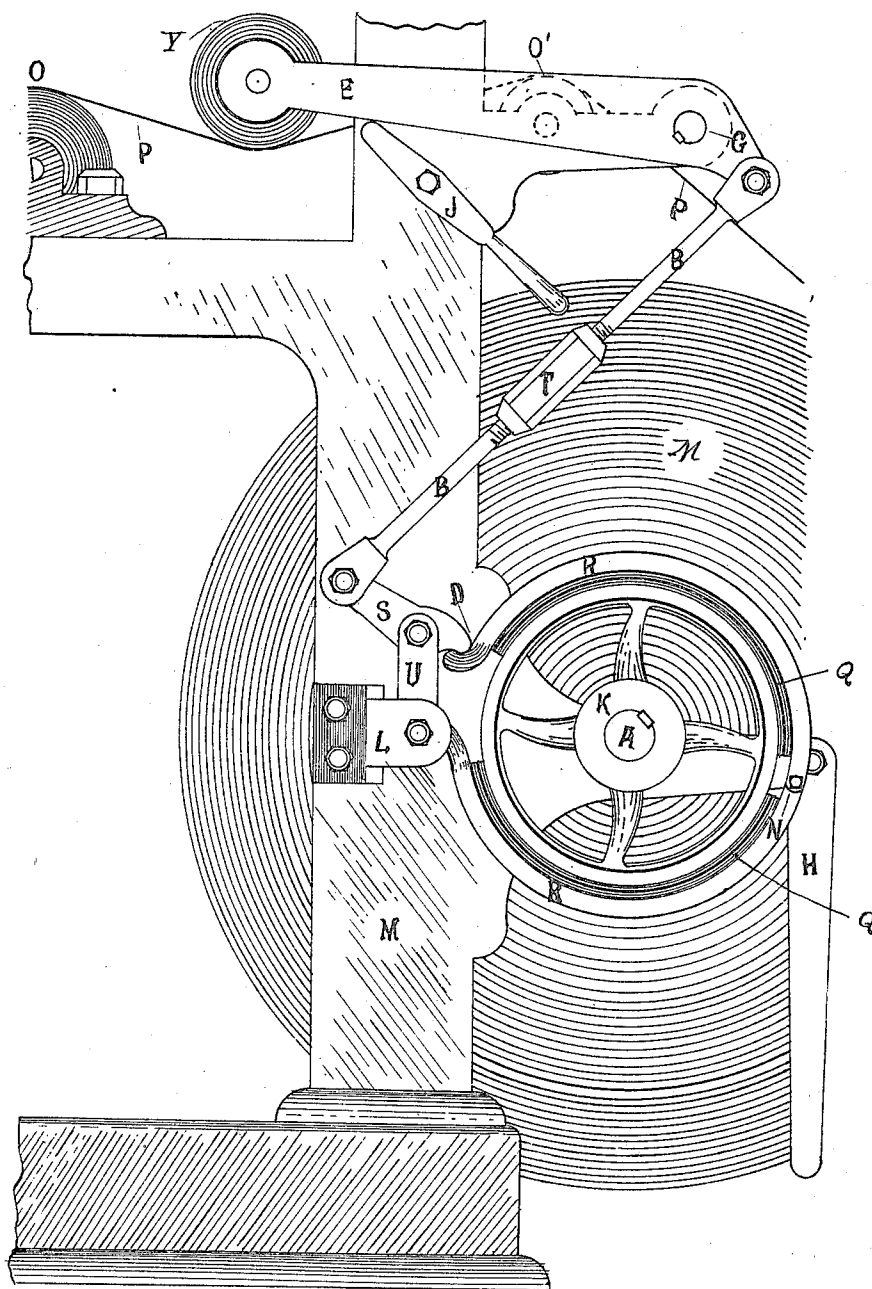
No. 680,706.

Patented Aug. 20, 1901.

E. A. EDMUNDS.
AUTOMATIC BRAKE.

(Application filed Mar. 16, 1901.)

(No Model.)



Witnesses.

Albert W. S. Proctor
Samuel A. Murphy

Inventor.

E. A. Edmunds

UNITED STATES PATENT OFFICE.

ERI ALBERT EDMUNDS, OF BROOKLYN, NEW YORK.

AUTOMATIC BRAKE.

SPECIFICATION forming part of Letters Patent No. 680,706, dated August 20, 1901.

Application filed March 16, 1901. Serial No. 51,537. (No model.)

To all whom it may concern:

Be it known that I, ERI ALBERT EDMUNDS, a citizen of the United States, residing at New York, in the county of Kings, State of New York, have invented a new and useful Automatic Brake, of which the following is a specification.

My invention relates to improvements on web-printing presses and works in conjunction with the same.

In web tensions for printing-presses difficulty has heretofore been experienced in maintaining the proper tension upon the paper as it is drawn off from the roll and such roll diminishes in diameter. It has heretofore been usual to wind the paper upon an iron tube, and when the roll is brought to the press an axis or shaft is passed through the iron tube, and the axis is supported in suitable bearings and provided with a friction-wheel at one end, and a clamp and screw applies to the wheel a friction for preventing the paper unwinding too fast and for insuring the proper delivery of the paper into the press. The workman sometimes applies too much friction and the paper is injured or too little friction and the web becomes loose between the roll and the impression-cylinder.

The objects of my invention are, first, to provide an automatic brake; second, to provide a brake that will successfully regulate the tension of the web of paper or tapestry (as the case may be) and keep it normal at all times, regardless of the diminution of the roll from which the web is being taken; third, to so regulate the momentum of the roll of paper as to give off an even tension with the least possible effort and friction, and, fourth, to obviate entanglement and danger, should the web break between the roll of paper and the cylinder of the press by instantly stopping the revolution of the roll of paper. I attain these objects by the mechanism illustrated in the accompanying drawing, in which is shown a side elevation of my device.

M is a vertical section of the framework of the press, on which the roll of paper may be mounted for delivery.

Roller Y extends across the press, while a portion of its weight is sustained by the web P. The greater part is depended on the end of lever E, which has a duplicate at the op-

posite side of the press (not shown in the drawing) that acts in the same manner and for the same purpose, except that it extends back to shaft G only, on which it is securely fastened by means of a hub and key, and therefore works in unison with lever E, which is attached to the same shaft G, substantially as described.

Roller Y acts as a power to operate the brake, taking its action from the web P between the two rollers O O.

Shaft G is supported by two extended arms of the framework M, as indicated by dotted lines on lever E.

The connecting-rods B B are attached at the upper end by means of a bolt and nut to the fulcrum end of lever E, and at the opposite end to lever S, which is in turn bolted to the vertically-vibrating stanchion U, which is similarly fastened between the stationary bracket L and the framework M at its lower end, as shown by the drawing.

To the bracket L the brake-shoe R R is attached, and has in its center a hinge-joint N to facilitate its easy adjustment to and from the brake-wheel K, which is firmly keyed to the end of shaft A, that passes through and sustains the roll of paper W in its position.

Lever H is to raise the roll of paper W to its position on the framework M, as shown by the drawing. The shaded portion Q between the brake-shoe R R and the periphery of the brake-wheel K indicates facing on the brake-shoe.

The rods B B have right and left hand threads, respectively, on which the nut T operates for the finer adjustment of the tension while the machine is in motion or otherwise. Thus to effect a greater tension shorten the rods B B by turning the nut T. According to the adjustment of the roller Y by the nut T a greater or less tension is applied to the web P, for the reason that the lifting force of the web varies according to its position between the rollers O O'. Thus for a high position of the roller Y very little weight is supported by the web, most of the weight being applied to the brake, which puts the web in a high state of tension. When the adjustment T is varied, however, the roller Y sinks. In this position a greater portion of its weight is borne by the web on account of the deep

sag. Accordingly a lighter weight is applied to the brake, thereby lessening the web tension.

To replace the roll of paper W, it is necessary to raise the roller Y and lever E, which will be held in position by lever J, thus counteracting the strain on the rods B B and lever S and relieve the point of lever S from the uppermost end of the brake-shoe R R, as indicated by D. The shoe R R may then be thrown off and will hang suspended from the bracket L.

I am aware that prior to my invention printing - presses have been made with brake-wheels and brake-shoes working in conjunction with levers. I therefore do not claim such a combination broadly; but

What I do claim as my invention is—

The combination with the paper-roll shaft

and its friction-wheel, the brake-shoe applied to such wheel, a lever for acting upon the brake-shoe, a vibrating stanchion to support said lever, a bracket to support the aforesaid vibrating stanchion and the stationary end of the brake-shoe, rolls over which the web of paper passes, a vertically-moving roll actuated by the said web, arms working in unison supported by the shaft to which they are secured, a lever to raise and support the arms when necessary, connecting-rods and adjusting sleeve-nut for varying the tension of the web and compensating for the wear of the brake-shoe, substantially as specified.

ERI ALBERT EDMUNDS.

Witnesses:

GEORGE R. RILEY,
DANIEL A. MURPHY.